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ABSTRACT

This guide to nutrition education can be used as a basis for curriculum development at the school district level, as well as a basis for daily lesson planning by teachers. It is arranged by topic, subtopic, terminal and enabling objectives, learner activities, and teacher information. The topics and subtopics identify the broad areas of nutrition. These topics are: the development of food, the uses of food, factors influencing eating patterns, and food advertisements. The terminal and enabling objectives indicate goals to be achieved and the means of achieving them. The learner activities are intended to assist pupils in achieving the lesson goals. The teacher information section provides teachers with information needed to facilitate the implementation of the learner activities. A bibliography of reading material suitable for children from kindergarten through the third grade is appended. (JD)

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HEALTH EDUCATION
PHYSICAL DIMENSION OF HEALTH

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NUTRITION EDUCATION
GRADES K–3

Reprinted 1981

The University of the State of New York
The State Education Department
Bureau of School Health Education and Services
Albany, New York 12234
1979

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PREFACE

How to Use this Curriculum Guide

This guide is designed to facilitate nutrition education in two ways:

1. The guide can be used as a *basis* for curriculum development at the school district level. The school district curriculum development committee should select those topics, objectives and learner activities that are most consistent with local nutrition resources, needs and interests. *These should be further expanded or modified in accordance with learner needs and developmental levels.* They can also be arranged in sequential and progressive order to eliminate unnecessary duplication and to avoid gaps in learning from one grade to the next.

2. The guide can be used by teachers as a *basis* for daily lesson planning. Topics, objectives and learning experiences should be selected by the teacher (and perhaps by the learners) that are most appropriate for the group of learners. Appropriateness should be determined by the learners' abilities, needs and interests.

The guide is arranged by topic, subtopic, terminal objectives, enabling objectives, learner activities and teacher information. The topics and subtopics provide the teacher with a means for identifying the desired broad area of nutrition. The *terminal objective* indicates the goal to be achieved, while the *enabling objectives* identify the stepping stones for achieving the terminal objective. The learner activities are intended to assist pupils in achieving the enabling objectives. Finally, the teacher information section provides the teacher with information needed to facilitate the implementation of the learner activities.

Teachers are urged to review the *Teachers' Manual* prior to or in conjunction with lesson planning. See Appendix A, p.107 of the *Teachers' Manual* for sources of assistance in planning and teaching about nutrition.

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In addition, the manuscript was reviewed by the Bureau of School Food Management and Nutrition, Richard Reed, Bureau Chief; the Bureau of Home Economics Education, Elizabeth Brown, Bureau Chief; and the Bureau of General Education Curriculum Development, Herbert Bothamley, Bureau Chief; all of the New York State Education Department.

Many elementary school teachers and secondary school health educators were also consulted, especially in regard to the application of the guide to the educational process within schools.

The entire project was under the direction and supervision of Albert E. Bedworth, Associate in School Health Education, the Bureau of School Health Education and Services, the State Education Department, who also edited the manuscript and prepared it for publication.

TABLE OF CONTENTS

	Page
Preface	iii
Acknowledgements	iv
Message To Teachers	1
Nutrition Concepts and Understandings	2
Grade Placement for Learner Activities Related to Ojbectives	4
Suggestions for Evaluating Learner Comprehension	5
TEACHING/LEARNING STRATEGIES	9
The Development of Food	11
Basic Factual Information	12
What is Food?	13
What Are the Varieties of Food?	15
Where Does Food Come From?	19
What Foods Do Plants and Animals Need?	21
The Uses of Food	25
Basic Factual Information	26
What Foods Are Needed for Growth?	27
Why Is Energy-producing Food Necessary?	29
What Is the Importance of Eating a Good Breakfast?	31
What Is the Importance of Eating a Good Lunch?	33
Why Are Snack Choices Important?	35
Factors Influencing Eating Patterns	37
Basic Factual Information	38
How Is Food Tasted?	39
Why Is Eating Pleasurable?	40
What Special Events Is Food a Part of?	41
Why Do Different Families Have Different Eating Patterns?	42

Page

Food Advertisements 43

Basic Factual Information 44
What Is Advertisement? 45
Why Are Advertisements Used? 46
How Does the Media Affect Our Food Choices? 47

APPENDIXES

A: Books With Food As the Primary/Secondary Subject 48
B: Supplementary Resources 58
C: Nutritive Value of Some Foods 60

MESSAGE TO TEACHERS

For nutrition education to be meaningful to the learners it is important for them to use all five senses. Learning experiences should be based upon an exploration of foods using the sense of taste, smell, sight, touch and sound. For example, crispy foods, such as celery, have a different attraction than soft foods, such as bread. The sound and texture as well as the taste and appearance influence the pleasure of eating.

A variety of creative, learner-centered action experiences should be used. For example, foods can be grown in the classroom. Beans, radishes, parsley and other rapid growing vegetables can be grown by the learners as part of other learning experiences with foods. Learners can acquire a great deal of knowledge about many foods by reading the labels on packaged foods. There are many books for children with food as the primary subject that they can read or that can be read to them. When appropriate, use peer teaching/learning approaches, puppetry, art projects, role playing, dramatization, and field trips to orchards, maple sugar farms, etc.

Many areas of nutrition education can be an integral part of other subjects. Use interdisciplinary approaches when appropriate. They can include science projects related to nutrition, social studies, art, language arts, and math. To make nutrition learning as meaningful as possible within the school, there should be many laboratory experiences with foods. The school food services should be used as the laboratory for nutrition education. The learners should have many personal experiences with a wide variety of foods. One way of achieving this is through tasting parties. It is important to include parents as much as possible in the activities of the learners. This is necessary to insure home/school reinforcements wherever possible.

Prior to planning and teaching about nutrition, it will be helpful to review certain sections of the *Teachers' Manual*. For an overview of nutrition education for the primary grades and a listing of teacher goals, see pages 9-12 of the *Teachers' Manual*. Other references to the teachers' manual are made prefatorily to teaching each topic in this guide.

Appendix B: "Correlated Resources" describes a variety of learning activities and aids that are available through your county Cooperative Extension Office.

NUTRITION CONCEPTS AND UNDERSTANDINGS

The development of accurate nutritional concepts is important for formulating attitudes, establishing values and clarifying beliefs about foods and eating. Concepts are developed as a result of learning experiences. The more realistic the learning experience, the more likely that meaningful concepts will be developed. The development of nutritional concepts is the foundation upon which nutritional attitudes are established and nutritional values clarified. The chief nutritional concepts and understandings are:

- *Food makes a difference in how we feel about ourselves, others, and the world around us.*
- *We get food from a variety of sources including plants and animals.*
- *We all have favorite foods that give us pleasure because we like the way they taste, feel, smell and look.*
- *Food is part of many happy situations that give us pleasure.*
- *Like all fuel, food is used up and must be constantly supplied for our bodies to function.*
- *Each of us grows a little differently, but we all need food in order to grow as we should.*
- *Cells are the building blocks of the body.*
- *Food supplies the materials necessary for our bodies.*
- *Different families eat different kinds of food.*
- *People in different parts of the world eat different foods and eat in different ways.*
- *We can choose what we eat from what is available to us.*
- *Food contains nutrients necessary for growth, development, and human functioning.*
- *Different foods may contain different nutrients as well as different quantities of the same nutrients.*
- *All people need the same nutrients, but not necessarily in the same amounts.*
- *Plants make their food from water, sunlight, and substances in the soil.*
- *Animals get their food from plants and from other animals.*
- *Food makes a difference in how we feel and function.*
- *There are many different kinds of food.*
- *Animals provide us with meat and eggs.*
- *Milk comes from cows, goats, and other mammals.*
- *Vegetables and fruits grow on farms and in gardens.*
- *Cereals, pastas, and breads come from grains.*
- *Food is the fuel for our bodies and produces energy and heat that is necessary for all activities.*
- *Eating a breakfast is important since it provides us with the energy needed for the morning's work and play.*
- *All living things need food and water for growth.*
- *Food supplies the materials necessary for making new cells.*
- *We should eat a variety of foods and try new ones because a varied diet is the best way to get the nutrients we need.*
- *Food availability differs from one geographic area to another and from one time period to another.*

- *Sanitary measures in handling food should be practiced constantly.*
- *Certain emotional states may interfere with proper nutrition.*
- *Some families grow much of their own food while others buy all of their food.*
- *There are many kinds of cereals and grains available to us.*
- *Food advertising influences the kinds of foods we eat.*
- *The advertisers of foods are chiefly concerned with selling their products.*
- *Snacks during the day if chosen with care can contribute significantly to the day's nutrient intake.*

GRADE PLACEMENT FOR LEARNER ACTIVITIES RELATED TO OBJECTIVES

Learner Objectives	Suggested Grade for Activities			
The learner is able to:	Kindergarten	First	Second	Third
o *distinguish between food and nonfood items*	*1,2,3,4,5*			
o *identify a variety of familiar and new foods.*	*6,7*	*8,9,10,11, 12,13,15*	*14*	
o *list places where people get their food.*		*18,21,22*	*17,20*	*16,19*
o *list the nutrients that plants and animals need for proper growth.*		*23,25,27*	*24,26*	
o *list several foods necessary for proper growth.*		*30*	*30*	*28,29,30, 31,32,33*
o *list several daily activities that require the use of energy.*	*34,35,36,37*	*37*	*37*	*38*
o *describe why it is especially important to eat an adequate breakfast.*	*39*	*40*	*41,42*	*40,43*
o *state the value of a good lunch*		*44,45*	*46*	*46*
o *describe a variety of nutritious and tasty foods that can contribute to the day's nutrient intake*			*47,48,49*	*47,48,49*
o *show the relationship of food to the senses.*			*50,51*	
o *describe ways that food provides us with pleasure*	*54*	*52,54*	*54*	*53,54*
o *list situations where food is used as an important part of the occasion*	*55*	*55*	*57*	*56*
o *explain why different families may eat different kinds of food.*			*58*	*59*
o *define food advertisement*				*60,61*
o *describe some techniques used by advertisers to buy their products*				*62*
o *cite instances of how food advertisements have changed his/her food choices*				*63*

NOTE: **The suggested grade for each activity is intended as a guide for planning. With slight alterations many activities can be made appropriate for other developmental levels, either younger or older.**

SUGGESTIONS FOR EVALUATING LEARNER COMPREHENSION

Introduction

Evaluating the extent to which learners understand the importance of nutrition information; are developing appropriate concepts, and will apply their new knowledge for improving eating patterns is a very complex process. Evaluation should be directly related to the achievement of learner objectives. There may be one or several evaluative items associated with each objective which can take a variety of forms. For example, a listing could be done orally or in written form.

Evaluation in nutrition education can be more effective when the learners are pretested as well as posttested. The pretest results should be used to plan the nutrition experiences needed by the learners. These results will identify those objectives that learners have already achieved. This will avoid unnecessary duplication from one grade to the next. The posttest will provide information about the learner's progress during the nutrition education experiences.

The suggestions below are intended as evaluative devices for use with learners at the *termination* of their nutrition experiences during the primary grades. The results should indicate the *basic* nutrition competencies developed by each learner. Selected evaluative items may also be used for evaluating pupils in each of the primary grades. These data should provide primary grade teachers with an indication of the progress each learner is making from one grade to the next. For each evaluative item, the grade in which it should be used is indicated. It will be noted that some items are appropriate for more than one grade depending upon when teachers decide to implement certain experiences that will result in achievement by the learners.

Suggested Evaluative Devices

Evaluative Device	Grade for Use*			
	K	1	2	3
1. Provide the learner with pictures of a variety of foods and nonfood Have them identify the foods.	X			
2. Using pictures (or actual foods) have the learners identify those that are relatively common in the American diet (potatoes) and those that are common in the diets of other cultures (rice).			X	X
3. Have each learner list five *new* foods that they have eaten within the past six months.	X	X	X	X

Evaluative Device	Grade for Use*			
	K	1	2	3
4. Have the learners state three nutrients that plants need for proper growth.		X	X	
5. Have each learner list the essential nutrients that each person must have for health			X	X
6. Have the learners identify three plants and three animals that people use for food sources.		X	X	X
7. Have the learners explain why if one eats a variety of foods, he or she is more likely to get an adequate diet.	X	X	X	X
8. Have the learners make a list of the ways the body uses food.		X	X	X
9. Have the learners list or identify five foods that contain the nutrients necessary for growth.				X
10. Have the learners explain why they need both the right kinds and the right amount of food.			X	X
11. Have the learners describe why different people need different amounts of food.				X
12. Have the learners list five foods they can eat which will provide them with energy.	X	X	X	
13. Have the learners describe how the body stores energy.	X	X	X	
14. Have the learners explain why eating an adequate breakfast is important.	X	X	X	X
15. Have the learners give two reasons why each person has at least one favorite food.	X	X	X	X
16. Have the learners give two reasons why each person eats the foods he or she does.	X	X	X	X
17. Have the learners identify two things in the environment that persuade people to eat certain foods.				X

Evaluative Device	Grade for Use*			
	K	1	2	3
18. Have the learners list three foods that are commonly eaten in three different cultures.			X	X
19. Have the learners explain how one's culture influences the kinds of foods eaten.			X	X
20. Have the learners explain why different families may eat different kinds of foods.			X	X
21. Provide the learners with pictures of two different ethnic meals. Have them compare the nutritional value of each.				X
22. Have the learners show how the senses influence one's food choices.			X	
23. Have the learners list three special occasions where food is an important part.	X	X	X	X
24. Have the learners describe how food provides us with energy.	X	X	X	X
25. Have the learners list three things they do that requires energy.	X	X	X	X
26. Have the learners identify three places that people get their food.			X	X
27. Have the learners identify the hidden message in a food advertisement.			X	X
28. Have the learners describe the purpose of food advertisements.				X
29. Have the learners list 3 ways in which food advertisers try to persuade us to buy their product.				X
30. Have the learners list 3 foods they eat or have tried because of food advertisements.			X	X
31. Provide the learners with 10 snack foods commonly eaten by children. Have them select the three most nutritious foods.			X	X

By the time that the learners have completed their primary grades experiences, each learner should be able to accurately achieve each of the evaluation activities. These may be used as the basis for "final" evaluation.

TEACHING/LEARNING STRATEGIES

TOPIC

THE DEVELOPMENT OF FOOD

SUBTOPICS

WHAT IS FOOD?

WHAT ARE THE VARIETIES OF FOOD?

WHERE DOES FOOD COME FROM?

WHAT FOODS DO PLANTS AND ANIMALS NEED?

TERMINAL OBJECTIVE

To become familiar with and motivated to include a variety of foods in the diet.

ENABLING OBJECTIVES

The learner is able to:

1. distinguish between food and nonfood items.
2. identify a variety of familiar and new foods.
3. list places where people get their food.
4. list the nutrients that plants and animals need for proper growth.

Basic Factual Information

Prior to teaching about "The Development of Food" it will be helpful to review the discussions of this topic that are presented on pages 26-28 and 37-48 of the *Teachers' Manual*.

It is important for the learners to acquire an understanding of the following:

- *What foods provide for the body.*
- *How the body uses food.*
- *What nutrients are.*
- *What nutrition is.*
- *How foods have evolved.*
- *Purpose and sources of vitamins and minerals.*
- *The importance and sources of protein.*

TOPIC: The Development of Food **SUB-TOPIC:** What is Food?

TERMINAL OBJECTIVE: *To become familiar with and motivated to include a variety of foods in the diet.*

ENABLING OBJECTIVE: *The learner is able to distinguish between food and nonfood items.*

LEARNER ACTIVITIES	TEACHER INFORMATION
1. Have the children sit on the floor in a circle. Pass around several objects for each child to see and to feel. Some of the objects should be common foods; e.g. apple, carrot, etc. Other objects should be nonfood items. They may, however, be food for other animals. 2. After each child has had a chance to see and feel each object, take them one at a time and talk about what it is, whether or not it is food, where it comes from and what the non-food items are used for. For the foods, talk about how each tastes and when most people eat them. Have a tasting party for foods that are appropriate. 3. Compile a variety of pictures of foods and food-like products from magazines. o What is a food? o What makes certain things foods and others not? o How many different kinds of foods can the pupils name? o Which ones are fruits? Vegetables? Meats? 4. Have the children select 5 or 6 of the pictures and paste them on paper. Each child should then identify the foods they have on their paper.	These activities are intended to help the pupils to recognize that there are many different kinds of foods, that foods come in a variety of shapes, and that some can be eaten without cooking. The pupils should learn that foods come from many parts of the world. It may be possible to bring into the discussions those foods associated with their social studies activities. The food-like or nonfood products can include such things as a toothbrush or mouthwash. Although they go into the mouth, they are not foods. Pictures of many different foods should also be included. Include pictures of foods with which some of the pupils may not be familiar. This activity can be made more realistic if some of the foods pictured could be brought to class the next day. In this way, the learners will also see and feel how they actually are. If it is appropriate, cut some of the foods into small pieces so that the learners can taste them.

5. Select one or two of the pages of pictures for class discussion. Talk about why some of the nonfoods are not foods and why some should not be put into the mouth. Discuss also why some other nonfoods can be safely put into the mouth.

   - o Why are the non-foods not foods?
   - o Why are the foods, foods?
   - o Why should some things never be put into the mouth?
   - o Why are some nonfoods safe to be put into the mouth?
   - o Can the pupils name all of the foods and where they come from?

Foods provide a specific purpose for the body. They are substances that can be digested, absorbed and assimilated by the body. They provide the body with energy, building materials for new cells and to repair damaged cells, and they regulate certain body functions. Nonfoods can not perform any of these functions.

Some things should never be put into the mouth because they may be poisonous, cause injury or infection.

SUB-TOPIC: What are the varieties of food?

ENABLING OBJECTIVE: *The learner is able to identify a variety of familiar and new foods.*

LEARNER ACTIVITIES	TEACHER INFORMATION
6. Have the children look up certain foods in the child's dictionary--one that contains pictures as well as the words. Have each child identify his/her favorite foods and see if they are included in the dictionary.	*A Child's Dictionary*, Scott Foresman & Co., 99 Bauer Drive, Oakland, New Jersey 07436.
7. Develop a scrapbook of the learner's favorite foods. Include pictures, descriptions, sources and so on.	Much language arts learning can take place through nutrition education. Letters and words can be learned better when they are associated with real life experiences. Since all people must eat and most people enjoy experiences with foods, nutrition learning can act as the motivator and vehicle for learning to read. (Consult with your librarian about books dealing with foods that are appropriate for your pupils.)
o Have the children draw a picture of three of their favorite foods. Color them. Name them. State where they come from. o Have the children state why they like to eat each of the foods they have drawn.	Nutrition experiences can also be the vehicle for art, science, and social studies.
	See Appendix B: Level One for additional activities related to food varieties.
8. Have a tasting party so that the children can sample different kinds of vegetables.	Be certain that some of the vegetables for the party are familiar to all of the children, but also include some unusual ones.
9. Have the children participate in preparing the foods for the party. Ask the children which foods they liked best. List these on the chalkboard and discuss why they are favorites. Include taste, color, texture, feel, and odor, in the discussion.	Have available in raw form some vegetables that are usually eaten cooked. For example, include pieces of cauliflower, turnip, etc.

10. On another day, have a tasting party that includes fruits.

    - o Can the seeds be eaten?
    - o Do people usually eat the seeds of fruit?
    - o Discuss the purpose of seeds for the fruit; as a food.

Be sure that the children notice the seeds in the fruit. Discuss the variations in the size and number of seeds. (See also activity number 16)

11. Compare fruits and vegetables.

    - o How are they alike?
    - o How do they differ?
    - o Do fruits and vegetables both have seeds?
    - o How do the tastes of fruits and vegetables generally differ?
    - o Does the texture of the fruit or vegetable add to the pleasure of eating it? In what ways?

The children should note that the texture of fruits and vegetables are quite different, for example, fruits are generally sweet and juicy. In making comparisons, discuss taste, texture and so on, but also discuss nutrient values of fruits and vegetables. Compare this with some other foods that pupils are more likely to eat; e.g., potato chips, etc.

12. Have the children identify many milk products with which they are familiar:

    - o butter
    - o cheese
    - o buttermilk
    - o whipped cream
    - o cottage cheese
    - o ice cream
    - o chocolate milk
    - o yogurt
    - o sour cream

A tasting party is useful in teaching about the different foods that are made from milk. Often a child will try a new food or even eat one that he or she dislikes if the rest of the class is trying it. In conducting a tasting party, present the foods to be tasted in small portions, preferably bite-sized pieces that can be picked up in the fingers so that the texture can be felt. Teach the children the name of the food.

Encourage each child to try every food. Don't, however, force a child to eat a food he or she refuses. Similarly, don't make an issue out of a dislike expressed by a child.

13. How many different kinds of cheeses can the class identify? Discuss how some of the cheeses are made.

    - o What makes the flavors different?
    - o Are some cheeses identified with certain countries?
    - o Is the texture of different cheeses different?
    - o Does this add to the pleasure of eating them?

List the different kinds of cheeses on the chalkboard.

This activity can also be done with cereals, breads, beans, and other foods that come in a variety of forms.

14. Have a tasting party with several of the pupils blindfolded. Use foods with similar textures; e.g. apple and onion, lettuce and spinach, and pear and peach.

    - o Does the look of food make a difference in taste?
    - o Are children more apt to try an unfamiliar food if they don't know it?
    - o What are the children's reactions to certain foods? List these reactions on the chalkboard and discuss why there are different as well as similar reactions.
    - o Can the children identify foods by taste and texture?
    - o What part does the sense of smell play in the taste of some foods?

Although tasting parties are generally simple to conduct, they may require some preplanning. This is especially true when specific objectives are involved such as having the pupils learn that some foods have similar textures but may have quite different tastes. It may be helpful to have some parents involved in planning these tasting parties. They could contribute some of the foods and this may eliminate the need to buy a variety of foods for this purpose.

The basic concept being developed with this activity is that the appreciation of food depends on more than just taste. Sight, smell and texture all are involved in our reactions to foods.

(See also activities number 47 and 48.)

15. Make butter. Have the children take turns doing the beating or churning.

    Give each child a taste at the whipped cream stage. When the butter is made, for a snack spread the butter on a piece of bread for each child and provide milk to drink.

To make butter, start with heavy cream. Beat the cream with an egg beater until butter is formed. The whipped cream stage will appear before the butter stage is reached. Butter can also be made by placing some heavy cream in a jar with a screw-on lid and shaking the jar vigorously.

After the butter forms, pour off the liquid (buttermilk). Add a pinch of salt to the butter.

Have the children taste the buttermilk.

- o Can you describe the taste?
- o Is it good? Why or why not?

Have each child taste the butter before salt is added.

- o Discuss the three stages of butter-making: (1) cream (2) whipped cream (3) butter.
- o What is the liquid that is left after butter is formed?
- o Is butter nutritious? Discuss.
- o Why did we eat the butter on bread instead of crackers?

Have the children try the butter on a variety of breads--enriched white, whole wheat, rye, pumpernickel, etc.

16. Have the children identify the varieties of foods that come from plants. List at least 5 for each general category according to those that are the flower, leaf, stem, and root of plants.

- o Which foods listed have the learners tried?
- o Which ones do they like?

One cup of buttermilk is about 90 percent water, containing 90 calories, 9 grams of protein, 296 milligrams of calcium, 10 I.U. vitamin A, thiamin, riboflavin, niacin and vitamin C in small amounts.

One cup of heavy cream from which butter is made is about 57 percent water, 840 calories, 5 grams protein, 90 grams fat, 173 milligrams calcium, 3,670 I.U. vitamin A, amongst other nutrients.

Enriched bread is generally more nutritious than most crackers. The nutrient values of breads will vary depending upon the kind of bread used; rye, white, whole wheat, etc.

Bread must be enriched but most crackers are not. Graham crackers are more nutritious than saltines. Also, crackers are frequently heavily salted.

This might be done by a table on the chalkboard or through ditto forms. The table could have the four headings of flower, leaf, stem and root. Examples are brocoli, lettuce, celery, carrot, respectively.

Have the pupils circle those they have tried and draw an X through those they like.

SUB-TOPIC: Where does food come from?

ENABLING OBJECTIVE: *The learner is able to list places where people get their food.*

LEARNER ACTIVITIES	TEACHER INFORMATION
17. Where do different foods come from? o Where does milk come from? o Where does meat come from? o Where do fruits and vegetables come from? o Where do cereals and bread come from? o Where do eggs come from? o Add, also, some prepared foods such as pasta.	Obtain the booklet, *Where We Get Our Food* from the office of the Dairy Council. (See Appendix A, p.107 of the *Teachers' Manual)* Other materials available from the Dairy Council appropriate for this area are: *Uncle Jim's Dairy Farm,* a film and booklet, the booklet, *More Milk Please,* and the filmstrip "Life on a Dairy Farm." The pupils should understand that the farmer produces and sells the food from his farm. The food is then prepared to go to the supermarket where we buy it. It may also be interesting to discuss some of the synthetic foods being made; e.g. imitation bacon from soybeans.
18. Arrange a class field trip to a dairy farm--to a farm where animals are raised for meat and eggs--to a vegetable farm--to a fruit farm.	Prior to the field trip, discuss and list the kinds of things the pupils are likely to see. Following the trip, discuss those things that impressed the pupils; some pupils will observe some things that others may have missed.
19. Using pictures of animals, discuss what meats come from which animals; especially those not obvious by their names. For example, hamburger, steak, sausage, ham, bacon, liver.	
20. Plan and conduct a visit to a bakery so that the class can observe how bread is made.	

21. Using pictures or food models, discuss where different foods come from. Concentrate especially on some of the less obvious ones; e.g., peanut butter, cheese, raisins, jams and jellies, cereal and bread.

It is desirable for the children to understand that cereal and bread come from grain which grows on the farm, that the grain is ground to make the flour that is used for making bread. Die-cut food models are available from the regional office of the Dairy Council. (See Appendix A, p.107 of the *Teachers' Manual)*

22. Make a list on the chalkboard of all of the people who are involved in handling foods. They may include:

    - o The farmer
    - o People who work in the supermarket
    - o The Butcher
    - o The baker
    - o The truck driver

23. As a culminating experience have the children act out roles of shopper, storekeeper, and so on. Use empty food containers for stock and some real foods that may be eaten by the pupils as a snack.

A miniature, inclass store can be built using empty cartons, food containers, canned foods, etc. This activity can be used in conjunction with mathematic experiences as well.

Strengthen the learners' vocabulary. Some words used during these activities:

apple	farm	peach
baker	farmer	pear
bread	favorite	raw
butcher	food	seed
butter	food-like	sight
cheese	fruit	smell
color	juicy	sweet
cooked	milk	taste
cream	nonfood	texture
cow	odor	vegetable
egg	party	yogurt

SUB-TOPIC: What foods do plants and animals need?

ENABLING OBJECTIVE: *The learner is able to list the nutrients that plants and animals need for proper growth.*

LEARNER ACTIVITIES	TEACHER INFORMATION
24. As a class project grow a variety of plants from seeds and without fertilizer (plant food). Compare the rates of growth and general health of the plants.	The class should learn that all living things need food and water for growth and survival. Plants get their food from water, sunlight, air and the soil. If any one of these is missing, the plant cannot grow normally and cannot live.
25. Keep the plants in the classroom and have the class compare the growth progress of those without adequate materials for manufacturing food.	A lima bean produces a rapidly growing plant. If a clear, plastic glass is used for the container and the bean placed in the soil at the edge, the growth of the sprout can be observed.
o Have the class make four signs to be placed on each of the following plants. Each sign should identify the plant and what it is given for growth.	Tomato plants also produce rapid results.
	Soil is a source of soluble minerals for plants. Tap water usually contains enough minerals so that dramatic results are not seen unless distilled water is used.
Plant A: in soil, water twice a week, in sunlight.	
Plant B: in soil, do not water, in sunlight.	Different plants have different needs for nutrients and for water. For example, the cactus can store water and therefore it can live on the dry desert. Other plants must have water often. A dandelion can grow in almost any kind of soil; a rose must have a more carefully chosen mixture.
Plant C: in soil, water twice a week, keep in the dark.	

Plant D: in distilled water (or in sand that has been thoroughly washed) water twice a week, keep in sunlight.

- o Why did we use distilled water for plant D?
- o How does a plant get its food?
- o Can a plant live without water? Explain.
- o Can a plant live without light? Without soil?
- o Can animals live without food?
- o Can animals live without water?
- o Can animals live longer without food or without water? Why?

26. Have the children tell about the kind of food their pets eat.

27. Visit a zoo and observe the kinds of foods the animals eat.

- o What kinds of food do people eat?
- o Where do these foods come from?
- o Make a list of the animals observed at the zoo and the kinds of foods they are given.
- o Is water always available for the animals? Explain.

47

The class may want to keep a record of the growth of each of the plants on a day-to-day basis. Measurements of height can be made, number of leaves and branches, etc. can be observed along with the color of the four plants.

Animals including people get their food from plants and from other animals.

Different kinds of animals eat different kinds of foods. For example, horses eat grass, oats, etc., while cats eat fish, meat and milk. One of the reasons for this is that not all animals have the same kind of digestive abilities. Cattle, for instance, have stomachs that allow them to digest hay. However, people like and eat more varieties of foods than any other animal.

Children of this age often have little choice as to what they eat (except they can choose to eat or not to eat what is provided for them.) Therefore, while it is important to lay the groundwork for informed choices of foods, at the primary grade level, this can best be done by establishing positive attitudes toward food and the willingness to accept a variety of foods.

48

28. A child who has a new puppy or kitten at home may be able to provide some personal experiences about the necessity of milk as a food for young animals. Some questions that could be explored are:

    - o Why do some young animals need milk?
    - o What does milk contain for the young animal's growth?
    - o Does milk from all animals have the same nutrients?
    - o What are some of these nutrients?
    - o Do human babies need milk? Why?
    - o Do all young animals (mammals) need milk?

Some young animals need milk to help them to grow. Milk is rich in proteins, some vitamins and minerals and energy for activities.

Food makes a difference in how we feel about ourselves, others, and the world in general.

Discuss with the class how they feel when hungry. Possible responses can be, restless, tired, unhappy, etc. A child with a baby brother or sister at home might be able to relate that the baby cries when hungry and sleeps happily after being fed. (See page 74 of the *Teachers' Manual* for a comparison of the nutrient value of human and cow's milk.)

29. Have the learners become familiar with the following words:

animal	*pet
energy	plant
fertilizer	protein
*fish	*soil
*grass	sprout
growth	stomach
health	sunlight
hunger	vitamin
mineral	*water
nutrient	*zoo

Obtain from the office of the Dairy Council, *Milk--- Its Nutrient Value*. (See Appendix A, p.107 of the *Teachers' Manual.)*

The learners should be able to spell and use in a sentence those words that are asterisked.

TOPIC

THE USES OF FOOD

SUBTOPIC

WHAT FOODS ARE NEEDED FOR GROWTH?

WHY IS ENERGY-PRODUCING FOOD NECESSARY?

WHAT IS THE IMPORTANCE OF EATING A GOOD BREAKFAST?

WHAT IS THE IMPORTANCE OF EATING A GOOD LUNCH?

WHY ARE SNACK CHOICES IMPORTANT?

TERMINAL OBJECTIVE

To appreciate the relationships between foods eaten and one's health, growth, development, and energy needs.

ENABLING OBJECTIVES

The learner is able to:

1. list several foods necessary for proper growth.
2. list several daily activities that require the use of energy.
3. describe why it is especially important to eat an adequate breakfast.
4. state the value of a good lunch.
5. describe a variety of nutritious and tasty snack foods that can contribute to the day's nutrient intake.

BASIC FACTUAL INFORMATION

Review the discussions on pages 37, 44, 47, and 50 of the *Teachers' Manual*. The learners should acquire an understanding of the following:

- *Food provides us with the specific nutrients we need for growth and energy.*
- *The importance and sources of energy-producing foods.*
- *The importance of food in the morning (breakfast).*
- *The role of food in achieving and maintaining health.*
- *How growth takes place and the factors that influence it.*
- *The importance of snack foods as contributors to an adequate daily nutrient intake.*

TOPIC: The Uses of Food **SUB-TOPIC:** What foods are needed for growth?

TERMINAL OBJECTIVE: *To appreciate the relationships between foods eaten and health, growth, development and energy needs.*

ENABLING OBJECTIVE: *The learner is able to list several foods necessary for proper growth.*

LEARNER ACTIVITIES	TEACHER INFORMATION
30. Ask these questions: o Are all boys and girls who are the same age the same size? Why? o Are all adults the same size? Why? o What factors influence how well one grows?	It is important that the learners understand that all living things need food for growth. Not only must people have enough food, they also must have the right kinds of food.
31. Using shelf paper, have each pupil draw an outline of a classmate until an outline for each pupil is made. Tape these outlines on the walls around the room (or in the hall). Be sure that each pupil's name is on the outline. This can be repeated two or three months later to see if the children are growing.	Some key concepts and understandings that the learners should develop are: o Each person grows differently. o All people need to eat food in order to grow as they should. o Every person has his or her own pattern for growth; how much and how fast. o A boy or girl whose mother and father are both short will probably also be short. The same is true for tallness. o One needs to be healthy to grow as he or she should. o To maintain health it is important to get enough rest and exercise and to eat the right kinds of food.

32. Have each pupil keep a record of height and weight at two-week intervals. After several weeks, have the pupils make a line graph of their growth. Take the average height and weight of the class at the beginning and at two-week intervals. Graph the growth of the class.

    - o Is each child growing?
    - o Are some growing faster than others?
    - o Is the class growing?
    - o How does each pupil's growth compare with that of the class?

Obtain copies of *Growth Record* from the office of the Dairy Council. (See Appendix A, p.107 of the *Teachers' Manual)*

- o good food will help one to grow to the size he or she was meant to be.
- o Differences in size of people are normal.
- o Everyone should grow, but not everybody will be the same size. (Of course, everyone stops growing at maturity).
- o Every part of one's body depends upon good food to grow and to be healthy.

33. Construct a make-believe person using styrofoam blocks held together with toothpicks, or use a bulletin board display built with discrete units of colored paper.

34. Using a microscope, have the children look at a slide of real cells. Discuss what the children have seen.

    - o How does growth take place?
    - o How are worn out cells replaced?
    - o What must be done if a "cell" of the make-believe person becomes damaged.
    - o How does this relate to the healing of a cut in a person?
    - o What supplies the essential materials for making new cells?

If more than one microscope is available, mount several different kinds of cells so that the learners can see there are different shaped cells in the body. Discuss the functions of cells and how they are the building blocks of the body.

Show how the make-believe person can be made to grow bigger by adding more "cells" and by replacing existing "cells" with larger ones.

Food supplies the materials necessary for making new cells.

Vocabulary:

cell	healthy
exercise	microscope
graph	rest
heal	size

SUB-TOPIC: Why is energy-producing food necessary?

ENABLING OBJECTIVE: *The learner is able to list several daily activities that require the use of energy.*

LEARNER ACTIVITIES	TEACHER INFORMATION
35. Show a picture of a train to the class; show a picture of a car; show children eating, and so on. o What is each picture showing? o What happens when a car runs out of gas? o What happens if children do not eat foods that give energy?	Obtain pictures of a train, car, children eating, children playing, etc. Food is the fuel for the body. It is necessary to produce the energy needed for all of life's activities. List the pupils' comments on the chalkboard. o Ask the pupils what they like to do best. What activities require energy? o Where do people get their energy? o How is energy replaced? o What are some foods that are high in energy?
36. Have the children form a long line to become a train. Go around the room. o What makes the train go? o What happens when the train runs out of fuel? o What kinds of fuel do trains use? Where do they get their fuel? Have the "train" stop. Pretend it is being refueled. o What can the train do now that it is refueled?	Food produces heat to maintain body temperature. Food acts as the fuel for the body, but like any fuel that is burned, it is used up and must be constantly supplied for our bodies to function properly. Work, play and other activities use up the energy in the body. When this occurs, a person gets hungry and needs to eat food to restore the needed energy. If one does not eat enough energy foods, the body will use its supply of stored energy.

37. Repeat the same activity except now each child becomes a car.

- o What kind of fuel does a car use?
- o Where does it get its fuel?
- o Why is fuel important for the car?

38. Repeat the same activity except the children are themselves.

- o What makes people go?
- o Where do people get their fuel?
- o Where does the heat for the body come from?
- o Where does the body get its energy? Discuss stored energy.

39. Use pictures to show different kinds of fuel being used to produce heat. Examples are a gas stove, a wood fire, coal furnace, the sun.

Discuss energy and its importance to people.

- o Where does much of our energy come from?
- o How do we conserve energy?
- o How can we conserve body energy? Is it important to conserve food energy? Why?
- o Why does the body need energy?

Summarize by showing pictures of children playing and children who are tired. Discuss what helps children play and what makes people tired.

Show pictures of children eating.

> *Note: The children should also recognize that one may get tired or look tired for reasons other than the lack of energy food.*

Show that the body needs energy to keep it warm. Have each pupil take their own body temperature in the room. If it is cold outside, have them take their temperature outside the room. Show that the pupil's body temperature inside the body remains the same even though the air outside is cold.

Discuss energy foods; carbohydrates and fat as our primary source of energy. Protein may also be used by the body for energy but its primary use should be for growth and repair.

Pure fat yields 9 kilocalories per gram while pure carbohydrates and protein yield 4 kilocalories per gram.

Compare the body's stored energy with a spring in a clock that must be wound up. When the spring is wound, the clock can run for hours (sometimes days), but when it runs down it must be wound up again. If it is wound before it runs down, it can continue to run. It doesn't have to stop.

Vocabulary:

body	play
conserve	refuel
fuel	stored
heat	temperature
hungry	work

SUB-TOPIC: What is the importance of eating a good breakfast?

ENABLING OBJECTIVE: *The learner is able to describe why it is especially important to eat an adequate breakfast.*

LEARNER ACTIVITIES	TEACHER INFORMATION
40. Have the pupils figure out how many hours pass between the last food eaten in the evening and breakfast the next morning. o Does the body require energy during sleep? Explain. o Is there any energy food left for the morning's activities? o How can we be sure that we have the energy needed for the morning's activities? o Why is it important to eat something in the morning?	It is especially important to emphasize the need for eating in the morning to provide the energy needed for the morning's activities. The Child Nutrition Act of 1966 provided Federal funds for a pilot school breakfast program for children in areas of need and for those who travel long distances to school. Such programs can provide an opportunity for teaching the importance of food intake in the morning. You may want to introduce the idea of basal metabolism as it relates to energy expenditure. (See page 44 of the *Teachers' Manual*)
41. Make a list on the chalkboard of foods that are good to eat in the morning.	Foods that are usually eaten at other meals are alright to eat for breakfast. For example, a hamburger or peanut butter sandwich along with fruit or juice can form the basis for a nutritious breakfast.
42. Have the class develop some unusual breakfast menus that do *not* contain the traditional foods for breakfast, e.g., toast, eggs, bacon...	
43. Have the pupils tell or draw pictures of what they like to eat in the morning. Each pupil should label each food item. Are there any unusual foods listed?	These activities may be conducted in relation to art and language arts. List the foods on the chalkboard.

44. Have each pupil keep a record for a week of what they eat in the morning.

- o How many different kinds of traditional breakfast foods have been eaten by the pupils?
- o What is a traditional breakfast food?
- o How did these foods become known as breakfast foods?
- o Do some pupils eat foods that are not usually thought of as breakfast foods? What are they?

45. Have the children participate in making a bulletin board or other display on the subject "Food in the Morning." Perhaps the display could be used at a PTA meeting, open house or other school/community function.

Evaluate with the class the kinds of foods they eat in the morning.

One of the chief concepts that should be developed is that there are many different kinds of foods that are good to eat in the morning.

The County Cooperative Extension has a Youth Project entitled "Food In the Morning." It contains a teachers' guide and activities sheets.

Obtain from the office of the Dairy Council copies of *What Did You Have for Breakfast This Morning?* (See Appendix A, p.107 of the *Teachers' Manual*) It contains:

- o a poster which shows children from different countries and ethnic groups. It is intended to help children recognize that food habits can be different but still healthful.
- o an activity piece for individual pupil use. It reproduces the poster and provides space for menus.
- o a teacher's guide that describes the food habits in the countries of the children pictured on the poster.

Vocabulary:

activity	menu
breakfast	nutritious
ethnic	peanut butter
habit	record
hamburger	sleep
	toast

SUB-TOPIC: What is the importance of eating a good lunch?

ENABLING OBJECTIVE: *The learner is able to state the value of a good lunch.*

LEARNER ACTIVITIES	TEACHER INFORMATION
46. Discuss with the pupils their favorite foods for: o lunch o dinner or supper o snacks Make a list on the chalkboard. o Why are these favorite foods? o Are they nutritious? o Check those that are energy foods. o How often do the pupils eat their favorite food? o Does your school have a school lunch program?	Although eating a good breakfast is important, people also need to eat several times a day. (See also activities 53, 54, and 55) Obtain the poster, *Join Us for Lunch* (See Appendix A, p.107 of the *Teachers' Manual*) from the office of the Dairy Council. It depicts children in a school cafeteria line. The poster is intended to help to develop positive attitudes toward the school lunch and to encourage good lunch eating practices. If many of your pupils bring their lunches to school, observe and compare the foods eaten with those available through the school lunch program. If many of your pupils go home for lunch, observe the practices that may interfere with eating an adequate lunch. For example, do some pupils stop at a store to buy candy on the way home? Do some children bring snacks to school that they eat on the way home (or possibly during the morning)?

47. Study the school lunch menus for the week ahead.

- o Do the menus comply with the requirements for a type A lunch?
- o Is an ala carte menu provided? Is it nutritious?
- o Do the week's menus provide for variety from day to day?
- o How many favorite foods, as listed earlier, are on the menus?
- o How many pupils bring their lunch? What do they generally bring? Are the lunches nutritious?

It will be helpful to establish some criteria as a guide to determine what constitutes a nutritious meal. For example, some ala carte dishes may be nutritious but inadequate if eaten alone.

It is important to place lunches in context with the other meals and snacks that the pupils eat during the entire day.

Vocabulary:

ala carte	lunch
cafeteria	menus
candy	school
dinner	snack
eating	supper

SUB-TOPIC: Why are snack choices important?

ENABLING OBJECTIVE: *The learner is able to describe a variety of nutritious and tasty snack foods that can contribute to the day's nutrient intake.*

LEARNER ACTIVITIES	TEACHER INFORMATION
48. Have the pupils keep a record of all of the snack foods they eat for one week. o List these on the chalkboard. o Which ones are fruits, vegetables, cereals or grains, milk, dairy products? o Which ones are essentially empty calories; e.g. candy, soda, etc. 49. Using a chart of nutrient values of food analyze some of the snacks chosen most frequently by the pupils. o What kinds of more nutritive substitutions can be made for empty calorie snacks? o Are they just as tasty and pleasurable? 50. Following discussions about the importance of choosing snacks wisely, have the pupils again keep a record of the snacks they choose. o Compare with the first listing. o Are there improvements in snack choices? o What else does the class suggest that will improve their daily nutrient intake? o What does the term "junk foods" mean? o What is a better term to use than "junk foods"?	Nutritional adequacy is determined by the food intake for the whole day. Therefore, although breakfast and lunch are important, it is necessary to also consider the kinds of foods that pupils choose as snacks. Since children of this age have quite a bit of freedom in choosing their snacks, it is important that they understand that snacks can consist of tasty, pleasurable nutritious foods, rather than only foods that are chiefly empty calories. This does not mean that such foods as cookies must be ignored, some are quite nutritious and along with a proper beverage choice (milk, for example) can contribute significantly to the day's nutrient intake. Obtain a copy of Home and Garden Bulletin No. 72, *Nutritive Value of Foods*, U.S. Department of Agriculture Washington, D.C. Many nutrition textbooks and health textbooks also contain tables of the nutritive value of many foods. The County Cooperative Extension has a youth project entitled, "Snack Wisely". It contains a teachers' guide and activities sheets. (See also Appendix B for supplementary resources)

TOPIC

FACTORS INFLUENCING EATING PATTERNS

SUBTOPIC

HOW IS FOOD TASTED?

WHY IS EATING PLEASURABLE?

WHAT SPECIAL EVENTS IS FOOD A PART OF?

WHY DO DIFFERENT FAMILIES HAVE DIFFERENT EATING PATTERNS?

TERMINAL OBJECTIVE

To understand the numerous factors related to influencing one's eating patterns.

ENABLING OBJECTIVES

The learner is able to:

1. show the relationship of food to the senses.
2. describe ways that food provides us with pleasure.
3. list situations where food is used as an important part of the occasion.
4. explain why different families may eat different kinds of food.

BASIC FACTUAL INFORMATION

Review the discussions on pages 31,32, and 34 of the *Teachers' Manual*. The learners should acquire an understanding of the following:

- *The role of taste, smell, appearance and texture of foods in influencing eating behavior.*
- *Why foods provide us with pleasure as well as nutrients.*
- *The factors that influence one's eating behavior and why they are important.*

TOPIC: Factors Influencing Eating Patterns **SUB-TOPIC:** How is food tasted?

TERMINAL OBJECTIVE: *To understand the numerous factors related to influencing one's eating patterns.*

ENABLING OBJECTIVE: *The learner is able to show the relationship of food to the senses.*

LEARNER ACTIVITIES	TEACHER INFORMATION
51. Help the pupils discover how we taste by mapping out the areas of the tongue that taste different flavors. o On what part of the tongue can we taste sweet, sour, salt, and bitter foods best? o Are these the only flavors that we can taste? o What part does odor play in enhancing the flavor of foods? o Why do we use seasonings on foods? o Have each pupil draw an outline of a tongue and label the areas of taste.	Have available small quantities of the following: salt, sugar, lemon slices, grapefruit rind, linings from nut shells and toothpicks. With a toothpick have each pupil drop a little of each food on different parts of the tongue. Have the pupils try to determine at which part of the tongue the flavor is tasted best. Taste buds on the tongue are located in the following places: o *Sweet*, tip of the tongue and on the sides halfway back. o *Salt*, tip of the tongue and around the edges. o *Bitter*, back of the tongue. o *Sour*, sides of the tongue. Vocabulary: bitter — sour flavor — sweet salt — taste buds seasoning — tongue

SUB-TOPIC: Why is eating pleasurable?

ENABLING OBJECTIVE: *The learner is able to describe ways that food provides us with pleasure*

LEARNER ACTIVITIES	TEACHER INFORMATION
52. Make a list on the chalkboard of all the favorite foods of all the pupils in the class. o How many pupils state that a particular food is their favorite? o How many different food favorites are there? o Why are these favorite foods of the pupils? o Is taste of the food the only reason the pupils like it? o What makes foods taste good? o Is the appearance of food important? Why or why not?	Food is used for pleasure as well as for nutrition. Everyone has favorite foods that give pleasure because of the way they taste, feel, smell and look. A person's preferences for certain foods are learned from experiences that have occurred with the foods. Many foods become favorites because of family traditions related to the serving of such foods, foods friends and relatives like, foods that are associated with other pleasant experiences, and so on. People develop their own idea of which foods taste good to them. (See also activity number 46)
53. Make a bar graph of favorite foods.	List the foods along the horizontal axis and the numbers of pupils along the vertical axis.
54. Make a bulletin board display of favorite foods.	

SUB-TOPIC: What special events is food a part of?

ENABLING OBJECTIVE: *The learner is able to list situations where food is used as an important part of the occasion.*

LEARNER ACTIVITIES	TEACHER INFORMATION
55. Have a birthday party for all the children whose birthdays fall within a certain month. Use an entirely different approach. Instead of the usual cake and ice cream, serve new foods such as carrot cake, cottage cheese, ice cream, squash pie, etc. Have the children help to plan the party. o Can we have a birthday party without cake and ice cream? o How would the party be different? o What other foods can we associate with certain events? (Turkey, ham, fruit and nuts, etc.) 56. Discuss holidays in which food has a traditional place. Make a bulletin board display of foods for these holidays. 57. Discuss: Mealtime is a time for the family to be together. o Why can it be important for the family to eat together sometimes? o Besides the kind of foods being served, what else can make mealtime pleasant?	Food is part of many happy situations (weddings, birthdays, holidays) that give us pleasure. Read to the class the tea party sequence from *Alice In Wonderland*. Vocabulary: appearance — holiday birthday — ice cream cake — mealtime family — pleasure

SUB-TOPIC: Why do different families have different eating patterns?

ENABLING OBJECTIVE: *The learner is able to explain why different families may eat different kinds of food.*

LEARNER ACTIVITIES	TEACHER INFORMATION
58. Make a list of the different kinds of menus found in different cultural and ethnic groups. Encourage the pupils to talk about foods their families especially enjoy. If some of the pupils cite foods that others have not eaten, arrange to bring some of that food to class for the other children to taste.	You may want to review the Dairy Council's poster, *What Did You Have for Breakfast This Morning?* (See Appendix A, p.107 of the *Teachers' Manual*) The class will conclude that families have their own favorite foods. Invite a foreign student from the high school or a college to come and talk with the class about the foods eaten in his or her native country. Discuss how these foods differ from or are like those in the United States.
59. Discuss the methods of eating in other countries. o What are some eating utensils that are used in various countries? o How are these foods prepared? (Seasoning, cooking, serving, etc.). o Why do people choose the foods they do? o Why do mothers choose the foods they do for the family?	You may want to make a list of certain dishes identified with certain nationalities. This can be done in conjunction with social studies. Possible answers are because she likes them, the family likes them, they are nutritious, they are economical, they are easy to prepare, they are available. Vocabulary: cook, culture, foreign, native, nationality, serve

TOPIC

Food Advertisements

SUBTOPIC

WHAT IS ADVERTISEMENT?

WHY ARE ADVERTISEMENTS USED?

HOW DOES THE MEDIA AFFECT OUR FOOD CHOICES?

TERMINAL OBJECTIVE

To understand the purpose and influence of food advertisements.

ENABLING OBJECTIVES

The learner is able to:

1. define advertisement.
2. describe some techniques used by advertisers to persuade us to buy their produces.
3. cite instances of how food advertisements have changed his/her food choices.

BASIC FACTUAL INFORMATION

Review the discussions on pages 34-36 of the Teachers' Manual. The learners should acquire an understanding of the following:

- *How food advertisements influence our eating behavior.*
- *How to analyze food advertisements and their true meaning.*
- *Distinguish between food facts and food myths.*

TOPIC: Food Advertisement **SUB-TOPIC:** What is advertisement?

TERMINAL OBJECTIVE: *To understand the purpose and influence of food advertisements.*

ENABLING OBJECTIVE: *The learner is able to define food advertisement.*

LEARNER ACTIVITIES	TEACHER INFORMATION
60. Have the pupils collect a variety of food advertisements from newspapers and magazines. Place the advertisements into three groups; (1) announcements, (2) announcements that persuade, and (3) chiefly persuasive. o How many of the food ads are simply announcements? o What do some of the ads do that tend to make a person want to buy the product? 61. Have each pupil write a paragraph about what they think an advertisement is.	Advertisements may take a variety of forms, such as an announcement that makes people aware of a product or event, an attempt to persuade people to buy a product, or announcement that contains a high degree of persuasion. The school cafeteria menu is simply an announcement to the pupils about what foods the cafeteria is serving each day. Many supermarkets announce bargain products. These advertisements are intended to persuade buyers to purchase foods and household products from their store rather than their competitors by offering a reduced price. Many advertisements on television are chiefly persuasive in that they attempt to persuade people to *want* their product. "Help Wanted" ads may be merely announcements or they may attempt to make the job vacancy attractive.

SUB-TOPIC: Why are advertisements used?

ENABLING OBJECTIVE: *The learner is able to describe some techniques used by advertisers to persuade us to buy their products.*

LEARNER ACTIVITIES	TEACHER INFORMATION
62. Have some pupils make a list of the products advertised during television programs that are intended for children. o How many of the advertisements are for food or food-related products? o How many of these are chiefly "empty" calorie foods? o What do the advertisements contain or do that makes you want to buy the product? o Are there any persuasive advertisements for nutritious foods? o What other kinds of products are advertised besides food-related ones?	Most Saturday morning television programs are intended for viewing by children. The products advertised are those that are generally produced with children as the market.

SUB-TOPIC: How does the media affect our food choices?

ENABLING OBJECTIVE: *The learner is able to cite instances of how food advertisements have changed his/her food choices.*

LEARNER ACTIVITIES	TEACHER INFORMATION
63. Have the pupils make a list of new foods they have tried since the beginning of school. o What circumstances surrounded the pupils' reason for trying the food? o How many of the foods were tried because of the persuasion of an advertisement? o What was there about the ad that made the food attractive? o Was the food as good as the advertisement made you believe it would be?	These may be listed on the chalkboard so that the whole class can become aware of how many different foods the class has tried. Many of the foods may have been introduced to the pupil by their friends, parents or other relatives, at a special occasion or because of an advertisement. Vocabulary: advertisement attractive buyer consumer empty calorie magazine market newspaper persuade produce supermarket

APPENDIX A

Books With Food as the Primary/Secondary Subject*

Fiction stories are a rewarding way to introduce health concepts at many age levels. All the stories suggested in this listing are fun and exciting for language skill development but....they were particularly chosen to be used as *springboards for exploration of nutrition/health education topics!*

PICTURE BOOKS

Books With Food As Primary Subject

Adams, Ruth. *Mr. Picklepaw's Popcorn.* New York: Lothrop, Lee and Shepard Co., Inc., 1965, 1-2**.

Mr. Picklepaw loved popcorn, so he always made sure to keep the kernels from the corn at the end of the season. One year the shed where he was storing the kernels got so hot that the kernels started popping, and the whole town had popcorn.

Afanasev, Alexei. *Salt.* Chicago: Follett Publishing Company, 1965, 1-2.

This Russian tale is the story of a merchant's disfavored son who brought salt to a tsardom which had never heard of it. Because he liked how it made his food taste, the tsar bought it all, payment for which was jewels, gold, silver, the love of the tsar's daughter and consequently the respect of his father.

Aliki, *The Eggs.* New York: Pantheon Books, 1969, 1-2.

This Greek folk tale recounts the story of a sea captain who eats four fried eggs at an inn but must leave before he can pay for them. When he returns six years later and finds that his debt is 500 gold pieces, he takes the innkeeper to court.

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* *This annotated bibliography was originally compiled by Ellen Harris, Children's Librarian, John Inverso, Director of Health and Drug Education both of the St. Lawrence-Lewis Counties BOCES, and Judith Needham formerly Associate in School Health Education, New York State Education Department.*

** *These numbers refer to the appropriate interest level according to grade. They were determined in almost all instances from the resource entitled Books In Print which obtains information from individual publishers.*

Auerbach, Marjorie. *Seven Uncles Come to Dinner.* New York: Alfred A. Knopf, 1963, 1-2.

In order to help his aunt prepare for a dinner for seven visiting uncles, Emile says he'll do the shopping. Instead of writing a list, his aunt tells him the things she needs in rhymes. Emile confuses them and brings home a different menu.

Berenstain, Stanley and Janice. *The Big Honey Hunt.* New York: Ramdom House, Inc., 1962, "I Can Read" Book.

Father bear decides that rather than buying honey, he'll show his son how to find it. They find it all right, but they don't get to take any home.

Black, Irma. *Is This My Dinner?* Chicago: Albert Whitman & Co., 1972, K-1.

In poetic verse a differentiation is made between food for people and food for animals. Used with young children, this book lends itself well to participation.

Brown, Marcia. *Stone Soup.* New York: Charles Scribner's Sons, 1947, 1-2.

Three soldiers entered a village where the peasants had seen them coming and had hidden all their food. The soldiers trick the peasants and soon have the food.

Brown, Myra Berry. *Ice Cream for Breakfast.* New York: Franklin Watts, Inc., 1963, K.

It was Mother's Day and Jenny and Paul's surprise was to give mother breakfast in bed. After spilling the cream and deciding waffles were too hard to make, mother's breakfast turned out to be instant coffee, instant waffles, instant juice, and ice cream.

Budd, Lillian. *The Pie Wagon.* Eau Claire, Wisconsin: E. M. Hale and Company, 1960, K.

When the pie wagon came through town, it was fun to get on and see all the pies. They were arranged alphabetically, and the pie man always had one for each letter of the alphabet.

Carle, Eric. *Pancakes, Pancakes.* New York: Alfred A. Knopf, 1970, K-2.

Jack wanted a pancake for breakfast, but he had to get the things needed to make it first: cut down some wheat to take to the mill to make flour, encourage the hen to lay an egg, milk the cow and churn the cream for butter. Then his mother shows him exactly what measurements to use for making it.

Carle, Eric. *Walter the Baker.* New York: Alfred A. Knopf, Inc., 1972, 1-2.

Walter the baker was renowned for his bread and rolls which he made for the duke, duchess and duchy. One day, entirely by accident, he makes the first pretzel.

Carle, Eric. *The Very Hungry Caterpillar.* New York: World Publishing Company, 1970, K.

This hungry caterpillar eats many interesting foods as it prepares for the day when it becomes a butterfly. The illustrations and format of this book are imaginative and delightful.

Corbin, William. *The Day Willie Wasn't.* New York: Coward, McCann and Geooghegan, Inc., 1971, 2-3.

Willie was a very good boy who did everything he was told to do, including eating everything he was told to eat; consequently, he became very fat. After a visiting cousin mocked him for his size, he stopped eating and wasted away to, literally, nothing.

Elkin, Benjamin. *How the Tsar Drinks Tea.* New York: Parent's Magazine Press, 1971, 2-3.

Petya the peasant is able to teach even the king a lesson in this beautifully illustrated tale. The lesson was that whether from a brass samovar or a gold samovar, tea tastes deliciously the same.

Hirsh, Marilyn. *Leela and the Watermelon.* New York: Crown Publishers, Inc., 1971, 1.

This story, set in India, is about a girl who loved watermelons until her brother told her that a pit would grow inside her. She learns that eating a pit will not cause pregnancy and gets back at her brother by eating the big watermelon her grandmother bought her all by herself.

Hoban, Russell. *Bread and Jam for Frances.* New York: Harper and Row, 1964, K-1.

Frances wanted to eat bread and jam for every meal, no matter what was placed before her. When her mother decided to give her bread and jam for every meal, Frances reconsiders and decides there is a lot she would like to try in the way of food.

Hoban, Russell. *Egg Thoughts and Other Frances Songs.* New York: Harper and Row, 1972, K-3.

This collection of Frances Songs begins with her famous "Soft-Boiled" and includes other songs on eggs as well as "Lorna Doone Last Cookie Song" and "Chocolate." Poetry for the very young is an unusual and fun approach to food.

Hogrogian, Nonny. *Apples.* New York: The Macmillan Company, 1972, K.

Without words, a story evolves of how an apple core, dropped upon fertile ground, can eventually result in an apple tree which bears more apples.

Holding, James. *A Bottle of Pop.* New York: J. P. Putnam's Sons, 1972, "I Can Read" Book.

Two boys sneakily buy a bottle of pop and return home to find that their mother has a bottle of pop for each of them. Later, when pop is on the table as a treat for dinner, it is milk which is requested.

Janice. *Little Bear Learns to Read the Cookbook*. New York: Lothrop, Lee and Shepard Company, 1969, K-1.

Little Bear wanted to do something special because cows can make milk and sheep produce wool. When the baker gave him a cookbook, he learned to make the best chocolate cake ever.

Janice. *Little Bear's Sunday Breakfast*. Eau Claire, Wisconsin: E. M. Hale and Company, 1958, K.

Little Bear woke up from his winter sleep, unexpectedly, and was very hungry. On his search for food he found a home where breakfast was all on the table, so he happily ate and then went to bed.

Kahl, Virginia. *The Dutchess Bakes a Cake*. New York: Charles Scribner's Sons, 1955, 1-2.

One day the Duchess became bored with her usual activities and decided to bake a lovely, light, lucious, delectable cake. She mixed in very strange ingredients and lots of yeast, and soon the cake rose into the sky with the Duchess on top.

Kahl, Virginia. *The Perfect Pancake*. New York: Charles Scribner's Sons, 1960, 1-2.

The marvelous cook in this rhyming story would only let the people, who loved her pancakes so much have one apiece. But one person changes things for all when he tricks the woman into feeding him more than just one.

Kahl, Virginia. *Plum Pudding for Christmas*. New York: Charles Scribner's Sons, 1956, 1-2.

The Duke was away fighting, so the King accepted an invitation for Christmas on the condition that there be plum pudding. Plums, however, were out of season, so it seemed an impossible task until the Duke arrived home on Christmas morning with plums.

Kantrowitz, Mildred. *Good-bye Kitchen*. New York: Parents' Magazine Press, 1972, K-2.

Emily loved to sit on her front stoop and watch all that went on in her neighborhood. She never did this unless she had her "watching-food bag" of fruit, cookies, candy, etc. to munch on while observing.

Kessler, Leonard. *Soup for the King*. New York: Grosset and Dunlap, 1969, 1-2.

This particular king would eat only soup for breakfast, lunch and supper because he loved it so much. When his soup cook quit, he proclaimed a contest to determine who would cook the soup he loved so much.

Krahn, Fernando. *A Flying Saucer Full of Spaghetti.* New York: E. P. Dutton and Company, Inc., 1970, K.

This wordless story illustrates a poor girl without anything to eat and a rich girl who won't eat what is put before her. Some magic elves come along and carry the rich girl's plate of spaghetti to the poor girl, who hastily eats it.

Lindman, Maj. *Snipp, Snapp, Snurr and the Buttered Bread.* Chicago: Albert Whitman and Company, 1934, K-1.

Snipp, Snapp and Snurr are Swedish triplets who in this particular story want butter on their bread. They end up wishing for the sun to shine so that the grass will grow for their aunt's cow to eat so that she will give milk from which their mother can get cream to churn into butter.

Lindman, Maj. *Snipp, Snapp, Snurr and the Gingerbread.* Chicago: Albert Whitman and Company, 1936, K-1.

Snipp, Snapp and Snurr had money to spend at the bakery, so they decided to wait for the gingerbread to be made. The baker invited them in to watch. They accidently fell into the batter and became real gingerbread boys.

Marshall, James. *Yummers!* Boston: Houghton Mifflin Company, 1973, K-2.

This is a story of a pig who is an overweight, compulsive eater. She needs to diet and attempts to lose weight through exercise. She eats too much and complains that her stomachache must be from walking.

McCloskey, Robert. *Blueberries for Sal.* New York: The Viking Press, 1948, K.

While blueberry picking with her mother, Sal ate more than she put in her pail. She soon wandered off and got into a real predicament, but they got home safely, her mother with a pail full of blueberries and Sal with three blueberries in the bottom of her pail.

Rockwell, Anne. *The Wolf Who Had a Wonderful Dream: A French Folktale.* New York: T. Y. Crowell, 1973, K-2.

A wolf dreams of food but cannot remember what kind, so upon wakening he searches the countryside for something good to eat.

Rothschild, Alice. *Fruit Is Ripe for Timothy.* Reading Mass.: Addison-Wesley Publishing Company, 1963, K.

Timothy picks different types of fruit, some to be made into jellies but also some to eat. He finds that he is not the only one to eat fruit; the animals in his garden like it too.

Schlein, Miriam. *The Big Cheese.* Reading Mass.: Addison-Wesley Publishing Company, 1958, 2-3.

A lowly farmer made a cheese he felt was fit for a king, so he started out to take it to the king. Because he boasted about his cheese, too many people insisted on tasting it, and when it actually got to the king, there was only a small sliver left.

Schreiter, Rick. *The Delicious Plums of King Oscar the Bad.* New York: Franklin Watts, Inc., 1967, 2-3.

When King Oscar the Bad decided to keep all of the plums from his Damson Plum Tree to himself, his subjects did not care. Geoffrey Hopewell did care, however, and grew sick from his craving for plum jelly. He was able to work out a trade with the king, and to everyone's surprise, came home carrying Damson plums.

Selsam, Millicent. *More Potatoes!* New York: Harper and Row, 1972, "I Can Read" Book.

Sue asked a storekeeper how he got more potatoes when he ran out of them. This resulted in her whole class visiting a farm and a warehouse. They soon understood how potatoes are grown.

Sendak, Maurice. *Chicken Soup With Rice.* New York: Harper and Row, 1962, K-2. Also available in paperback from Inquiry Department, Scholastic Magazines, 904 Sylvan Avenue, Englewood Cliffs, New Jersey 07632.

In poem form, a young boy goes through each month of the year and tells why that particular month is good for eating "chicken soup with rice."

Dr. Seuss. *Green Eggs and Ham.* New York: Random House, 1960, K.

Sam is not about to eat green eggs and ham anywhere or with anyone. Then he tries them and likes them and decides he could eat them anywhere with anyone.

Dr. Seuss. *Scrambled Eggs Super!* New York: Random House, 1953, K.

Peter T. Hooper is sick of normal hen's eggs, so he searches the world over for eggs from all kinds of strange birds and makes, for himself, "scrambled eggs super."

Shecter, Ben. *Partouche Plants a Seed.* New York: Harper and Row, 1966, 1.

When Partouche the pig gets in trouble for munching the neighbor's vegetables from her garden, he decides to plant his own. There are so many complications involved that he ends up moving his plants into the neighbor's garden, and they later munch vegetables together.

Solot, Mary Lynn. *100 Hamburgers: The Getting Thin Book.* West Caldwell, New Jersey; Lothrop, Lee & Shepard, 1972, K-3.

This enjoyable book is meant especially for the problem eater. A young boy has to face dieting under his mother's watchful eye. He begins to fantasize about food and eating 100 hamburgers "just once."

Steiner, Charlotte. *The Hungry Book.* New York: Alfred A. Knopf, 1967, K-1.

Jock, the farm dog, spends a hungry morning watching animals eat the foods they have found. Finally at lunch time, he eats while the children eat, and then he's content enough to sleep in the sun.

Tolstoy, Alexei. *The Great Big Enormous Turnip.* New York: Franklin Watts, Inc., 1969, K-1.

A turnip is too big for the farmer to pull out of the ground by himself, so he calls his wife to help; she in turn calls the granddaughter, who calls the dog, who calls the cat, and finally, with the help of a mouse, they pull the turnip out of the ground.

Thayer, Jane. *The Blueberry Pie Elf.* New York: William Morrow and Company, 1961, K-1.

Elmer the elf was too small to be seen, so he could not make the people he lived with understand that he wanted some blueberry pie. He did some jobs for them, and they wanted to do something for him; so he uniquely makes his request known.

Van Witsen, Betty. "Cheese, Peas and Chocolate Pudding," in *Storytelling with the Flannelboard,* ed. Paul S. Anderson, Minneapolis, Minnesota: T. S. Denison Company, Inc., 1970, K-1.

There was once a young boy who would only eat three things: cheese, peas and chocolate pudding. His family tried to tempt him with all kinds of delicious food, but he never changed his mind until by accident he tasted hamburger.

Watson, Nancy Dingman. *Sugar on Snow.* New York: The Viking Press, 1964, 1.

It was a tradition that Cammie have a sugar-on-snow birthday party each year because her birthday came at maple-sugaring time. Doughnuts, apple cider, sour pickles, and sticky maple syrup on snow make up the perfect party menu.

Williams, Jay. *The Cookie Tree.* New York: Parents' Magazine press, 1967, 1-2.

The town of Owlgate was very orderly until a cookie tree appeared in the village square one morning. The adults all fought over what to do with it, while the children accepted it as a gift from a magician and ate the cookies without question.

Yezback, Steven. *Pumpkinseeds*. New York: Bobbs-Merrill, 1969, K.

David's mother was at work when he awoke, so he made his own breakfast and took the nickel she left him and bought pumpkinseeds. After eating some himself, he tried, unsuccessfully, to share his purchase with people he met. Then he remembered that birds love seeds and joyfully shared his pumpkinseeds with some pigeons.

Young, Miriam. *Please Don't Feed Horace*. New York: The Dial Press, 1961, K-1.

Horace is a zoo hippopatamus who loves to eat anything thrown into a cage, but one day he got sick. It was discovered by a boy, who was looking on, that Horace, on the day he became ill, had eaten 779 things, mostly things like cigarettes and popsickles, not hippopatamus food.

Books With Food As A Secondary Subject

Aldridge, Josephine and Richard. *Reasons and Raisins*. Berkeley: Parnassus Press, 1972, K-2.

Little Fox takes a box of raisins his mother has intended for a pudding. Through many adventures and misadventures he almost forfeits them.

Buckley, Helen. *Some Cheese for Charles*. New York: Lothrop, Lee and Shepard Company, Inc., 1963, K.

Josie, a young girl, is fond of a mouse named Charles. She visits him each day, but wants to give him something special, which turns out to be cheese.

Buckley, Helen. *Too Many Crackers*. New York: Lothrop, Lee and Shepard Company, Inc., 1966, K.

Before leaving him for a vacation, a little boy's parents tell him to eat one cracker a day from a special box they've set aside. When the crackers are gone, he will know that they are due home.

Devlin, Wende and Harry. *Old Black Witch.* New York: Parents' Magazine Press, 1966, K-2.

An old witch is living in a house when Nicky and his mother buy it. She stirs up trouble at first, but soon they find she can make blueberry pancakes that they can serve in their tearoom. The recipe is on the back cover of the book, as in the Devlins' other books: *Cranberry Thanksgiving,* and *Old Witch Rescues Halloween.*

Galdone, Paul. *Obedient Jack.* New York: Franklin Watts, Inc., 1971, 1-2.

As Jack grew older he ate more and more food, so he had to go to work to earn his keep. His pay was often in food, but he couldn't seem to hold on to it for long. His stupidity is beneficial in the end.

Galdone, Paul. *The Three Bears.* New York: The Seabury Press, 1972, K-1.

This nicely illustrated version of a well-known story concerns a young girl's intrusion into the lives of three bears.

Gretz, Suzanne. *The Bears Who Stayed Indoors.* Chicago: Follett Publishing Company, 1970, K.

These lovable bears must stay inside because of rain, so they create things to keep them busy. Everything William creates has something to do with food, and he ends up eating for most of the day.

Janosch. *Just One Apple.* New York: Henry Z. Walck, Inc., 1966, 2-3.

Walter's apple tree never bore any apples, so he wished that it would yield just one. When it did, it was the biggest apple ever, but it proved to be very beneficial when a dragon choked to death on it.

Martin, Patricia Miles. *Rolling the Cheese.* New York: Atheneum, 1966, 2-3.

On Sunday afternoons, in long ago San Francisco, all the vegetable vendors would get together to roll cheese wheels. On the last Sunday of her visit, Maria persuaded the men to let her roll a cheese she had bought and she won the contest.

Rinkoff, Barbara. *The Pretzel Hero.* New York: Parents' Magazine Press, 1970, 2-3.

Hans' one desire in life was to be a pretzel maker like Emil, the greatest pretzel maker in all of Austria and the man to whom Hans was apprenticed. After becoming a hero during the war, he was promised his own pretzel shop at the end of his apprenticeship.

Smith, Kay. *Parakeets and Peach Pies*. New York: Parents' Magazine Press, 1970, 1-2.

Matthew arrives home from school on the afternoon of his mother's "Ladies Literary League" luncheon to find her distraught over how his pets have ruined her luncheon. The alliteration adds humor to an already funny idea.

Wahl, Jan. *Cabbage Moon*. New York: Holt, Rinehart and Winston, 1965, K-1.

Princess Adelgitha loved the moon, which was a cabbage. One day a miser stole it to make cabbage salad. The princess got it back, put it in place and married the first prince who told her the moon looked like a cabbage.

Yoda, Junichi. *The Rolling Rice Ball*. New York: Parents' Magazine Press, 1969, 2-3.

One day, when a woodcutter stopped to eat his lunch of three rice balls, the first one rolled away from him and landed in a mouse hole. The fantasy that follows brings the woodcutter enough money to live happily with his wife in their old age.

Young, Miriam. *Jellybeans for Breakfast*. New York: Parents' Magazine Press, 1968, K-1.

Two children pretend that they can do and eat anything they like. This fantasy involves foods a child would ideally like to eat, but when one thinks about them, they become distasteful - like "jellybeans for breakfast."

Zion, Gene. *The Sugar Mouse Cake*. New York: Charles Scribner's Sons, 1964.

In order to choose a Chief Pastry Cook for the Royal Kitchen of the King, a Royal Contest is to be held, and the best cake submitted will determine who will hold this position. The fat queen tests each cake, and the Sugar Mouse Cake is proclaimed the winner.

APPENDIX B

Correlated Resources*

Nutrition Comes Alive

This is a set of 7 leveled nutrition education activity packets for each of grades K through 6. There is also an eighth packet that provides ways in which the School Food Services personnel can become involved in the school's nutrition education program. The program is completely new, offering unique approaches to learning about nutrition which actively involves the pupils in experiences with food and nutrition. Each resource packet capitalizes on learning experiences through other disciplines, such as language arts, math, social studies, science, art and music, as well as health education.

A teacher's guide accompanies each resource packet and provides the teacher with a rationale, essential nutrition information, learning objectives, suggestions for implementing the learning experiences, and methods for evaluating pupil's comprehension. A brief description of each resource packet appropriate for grades K-3 follows:

Level 1: "Munch with Munch!"

The major nutrition concept for this resource packet is *variety*. The wise choice of a variety of foods in the daily diet helps to ensure that one obtains the many nutrients needed for health.

"Munch" is a friendly, fuzzy caterpillar puppet who likes to eat and try a variety of foods. The packet contains:

- Munch's "Feeling Great" board game
- Other board games
- Parent take-home activities sheets.

Level 2: "Let's Go Exploring"

The major nutrition concept for this resource packet is *Origins of foods*. Understanding the origins and growth of foods available to us helps the pupils to know about foods and their relationship to personal growth.

**For further information about these resources and how to obtain them for use with your pupils, contact the Bureau of School Health Education and Services, The State Education Department, Albany, New York 12234.*

As "explorers," the pupils learn that we eat animal foods as well as foods from plants. Growth is featured by emphasizing plant growth and animal growth. Protein and calcium are highlighted as important nutrients for growth. The packet contains:

- o a colorful floor game, "Plant Your Feet"
- o flannel board pieces
- o bingo games
- o concentration games
- o word games
- o cooking experiences.

Level 3: "Be a Choosy Chewer."

The major nutrition concept for this resource packet is *snack choices*. Grandma and her dog, Puddles," two fascinating puppet characters which have also been aired on New York State television stations, guide the pupils into many nutrition learning experiences with vitamins A and C having special emphasis. The packet contains:

- o sing-a-long video tapes
- o class-based puppet shows
- o snack of the week from the magic cupboard
- o team fitness and food projects
- o creative activities in language arts, music and art.

Level 4: "The Food Peddlers"

The major nutrition concept for this resource packet is *media affects food choice*. Food choices are influenced by social and psychological factors; a strong force used in media advertisements. The packet contains:

- o a video tape on advertising techniques
- o advertising and pricing math problems
- o sugar and dental health activities
- o food label investigation activities.

APPENDIX C

NUTRITIVE VALUE OF SOME FOODS

FOOD	Serving size	Water	Food energy	Protein	Fat	Carbohydrate	Calcium	Iron	Vitamin A	Thiamin	Riboflavin	Niacin	Ascorbic acid
		%	*Kcal*	*gm*	*gm*	*gm*	*mg*	*mg*	*IU*	*mg*	*mg*	*mg*	*mg*
Milk													
whole	1 cup	87	160	9	9	12	288	.1	350	.07	.41	.2	2
skim	1 cup	90	90	9	trace	12	296	.1	10	.09	.44	.2	2
cream (heavy)	1 cup	57	840	5	90	7	179	.1	3,670	.05	.26	.1	2
Cheese													
cottage	1 cup	78	260	33	10	7	230	.7	420	.07	.61	.2	0
American	1 oz.	40	105	7	9	1	198	.3	350	.01	.12	trace	0
cream	1 cu. in.	51	60	1	6	trace	10	trace	250	trace	.04	trace	0
Egg	1 lg.	74	80	6	6	trace	27	1.1	590	.05	.15	trace	0
Hamburger (regular)	3 oz.	54	245	21	17	0	10	3	20	.08	.2	5	0
Sirloin (broiled)	3 oz.	44	330	20	27	0	9	2.5	50	.05	.16	4	0
Corned beef	3 oz.	59	185	22	10	0	17	3.7	20	.01	.2	2.9	0
Beef & veg.stew	1 cup	82	210	15	10	15	28	2.8	2,310	.13	.17	4.4	15
Chicken breast	3.3 oz	58	155	25	3	1	9	1.3	70	.04	.17	11.2	0
Chicken drumstick	2.1 oz	55	90	12	4	trace	6	.9	50	.03	.15	2.7	0
Chili w/beans	1 cup	72	335	19	15	30	80	4.2	150	.08	.18	3.2	0
Liver, beef	2 oz.	57	130	15	6	3	6	5.0	30,280	.15	2.4	9.4	15
Ham, lean	2 oz.	54	245	18	19	0	8	2.2	0	.40	.16	3.1	0
Sausage, pork	2 link	35	125	5	11	trace	2	.6	0	.21	.09	1.0	0
Clams	3 oz.	82	65	11	1	2	59	5.2	90	.08	.15	1.1	8
Fish sticks, breaded	3 oz.	66	140	17	5	5	34	1.0	0	.03	.06	2.7	2
Oysters, raw	1 cup	85	160	20	4	8	226	13.2	740	.33	.43	6.0	0
Beans, lima (dry)	1 cup	64	260	16	1	49	55	5.9	0	.25	.11	1.3	0
Peanut butter	1 tbs	2	95	4	8	3	9	.3	0	.02	.02	2.4	0

APPENDIX C (Continued)

	Serving size	Water	Food energy	Protein	Fat	Carbohydrate	Calcium	Iron	Vitamin A	Thiamin	Riboflavin	Niacin	Ascorbic acid
		%	Kcal	gm	gm	gm	mg	mg	IU	mg	mg	mg	mg
Asparagus	4 spr	94	10	1	trace	2	13	.4	540	.10	.11	.8	16
Green beans	1 cup	92	30	2	trace	10	81	2.9	690	.07	.10	.7	10
Beets, whole	2 bts	91	30	1	trace	7	14	.5	20	.03	.04	.3	6
Broccoli	1 stlk	91	45	6	1	8	158	1.4	4,500	.16	.36	1.4	162
Brussels sprouts	1 cup	88	55	7	1	10	50	1.7	810	.12	.22	1.2	135
Cabbage, raw	1 cup	92	15	1	trace	4	34	.3	90	.04	.04	.2	33
Carrots, raw	1 rat	88	20	1	trace	5	18	.4	5,500	.03	.03	.3	4
Celery, raw	1 stlk	94	5	trace	trace	2	16	.1	100	.01	.01	.1	4
Corn, sweet	1 ear	74	70	3	1	16	2	.5	310	.09	.09	1.0	7
Lettuce, raw	1 hd	95	30	3	trace	6	77	4.4	2,130	.14	.13	.6	18
Peas, green	1 cup	82	115	9	1	19	37	2.9	860	.44	.17	3.7	33
Potatoes,baked	1 md.	75	90	3	trace	21	9	.7	trace	.10	.04	1.7	20
Potatoes,fr.frd.	10 pcs	45	155	2	7	20	9	.7	trace	.07	.04	1.8	12
Spinach	1 cup	92	40	5	1	6	167	4	14580	.13	.25	1.0	50
Tomatoes, raw	1 med	94	40	2	trace	9	24	.9	1,640	.11	.07	1.3	42
Apple, raw	1 app	85	70	trace	trace	18	8	.4	50	.04	.02	.1	3
Avocado	1 av.	74	370	5	37	13	22	1.3	630	.24	.43	3.5	30
Banana,med.	1	76	100	1	trace	26	10	.8	230	.06	.07	.8	12
Fruit cocktail	1 cup	80	195	1	trace	50	23	1.0	360	.05	.03	1.3	5
Grapefruit,raw	med.	89	45	1	trace	12	19	0.5	10	.05	.02	.2	44
Grapes, raw	1 cup	82	65	1	1	15	15	.4	100	.05	.03	.2	3
Lemon, raw	med.	90	20	1	trace	6	19	.4	10	.03	.01	.1	39
Orange, raw	med.	86	65	1	trace	16	54	.5	260	.13	.05	.5	66
Peach, raw	med.	89	35	1	trace	10	9	.5	1,320	.02	.05	1	7
Pear, raw	med.	83	100	1	1	25	13	.5	30	.04	.07	.2	7
Raisins, seedless	1½ tbs	18	40	trace	trace	11	9	.5	trace	.02	.01	.1	trace
Watermelon,raw	wedge	93	115	2	1	27	30	2.1	2,510	.13	.13	.7	30
Bagel, egg	1	32	165	6	2	28	9	1.2	30	.14	.1	1.2	0
Biscuits	1	28	90	2	3	15	19	.6	trace	.08	.07	.6	trace
Bran flakes 40%	1 cup	3	105	4	1	28	25	12.3	0	.14	.06	2.2	0
Cracked wheat brd.	1 slc.	35	65	2	1	13	22	.3	trace	.03	.02	.3	trace
French bread	1 loaf	31	1,315	41	14	251	195	10	trace	1.27	1	11.3	trace
Italian bread	1 loaf	32	1,250	41	4	256	77	10	0	1.32	.91	11.8	0

115

116

APPENDIX C (Continued)

	Serving size	Water	Food energy	Protein	Fat	Carbohydrate	Calcium	Iron	Vitamin A	Thiamin	Riboflavin	Niacin	Ascorbic acid
		%	*Kcal*	*gm*	*gm*	*gm*	*mg*	*mg*	*IU*	*mg*	*mg*	*mg*	*mg*
Rye bread	1 slc	36	60	2	trace	13	19	.4	0	.05	.02	.4	0
White bread	1 slc	36	70	2	1	13	21	.6	trace	.06	.05	.6	trace
Whole wheat bread	1 slc	36	65	3	1	14	24	.8	trace	.09	.03	.8	trace
Macaroni, cooked	1 cup	64	190	6	1	39	14	1.4	0	.23	.14	1.8	0
Noodles,egg,cooked	1 cup	70	200	7	2	37	16	1.4	110	.22	.13	1.9	0
Oatmeal,cooked	1 cup	87	130	5	2	23	22	1.4	0	.19	.05	.2	0
Pizza, cheese	1 sect	45	185	7	6	27	107	.7	290	.04	.12	.7	4
Rice, cooked	1 cup	73	225	4	trace	50	21	1.8	0	.23	.02	2.1	0
Rolls, hamburger	1 roll	31	120	3	2	21	30	.8	trace	.11	.07	.9	trace
Spaghetti,cooked	1 cup	72	155	5	1	32	11	1.3	0	.20	.11	1.5	0
Butter	1 tbsp	16	100	trace	12	trace	3	0	470	0	0	0	0
Margarine	1 tbsp	16	100	trace	12	trace	3	0	470	0	0	0	0
Beer	12 oz.	92	150	1	0	14	18	trace	0	.01	.11	2.2	0
Gin,vodka,rum, whiskey (80 proof)	1½ oz.	67	100	0	0	trace	0	0	0	0	0	0	0
Cola	12 oz.	90	145	0	0	45	0	0	0	0	0	0	0
Chocolate (semi-sweet)	1 cup	1	860	7	61	97	51	4.4	30	.02	.14	.9	0

Source of data: *Nutritive Value of Foods.* Home and Garden Bulletin No. 72, United States Department of Agriculture.